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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/887,026	06/25/2001	Gershon Elber	01/21687	7435

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EXAMINER	
PESIN, BORIS M	

ART UNIT	PAPER NUMBER
2174	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/887,026	ELBER ET AL.	
	Examiner	Art Unit	
	Boris Pesin	2174	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5,7-35 and 44-46* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-35 and 44-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

This communication is responsive to the amendment filed 09/05/2006. Claims 1-5, 7-35 and 44-46 are pending in this application. Claims 1, 8, 15, 34, 35, 44, and 45 are independent claims. In the amendment filed 09/05/2006, Claims 1-5, 7-17, 20-21, 30-31, 34-35, and 44-45 were amended and claim 46 was added as new. This action is made Non-Final.

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/27/2006 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites the limitation "another said second object" in line 6. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 recites the limitation "said second object" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 8-14, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. (US 6388667) in view of Matsuda (US 6734885).

In regards to claim 8, Sato teaches a server adapted to communicate with a remote client, said server comprising: a plurality of virtual objects within a virtual computing environment, each said virtual object having a relationship with a another virtual object, said relationship being such that an interaction with each said virtual object is operable to bring about a consequential interaction with at least another said second object (i.e. "Actors also include sound control actors, storage region management actors, and actor-to-actor communications actors." Abstract). Sato does not teach a virtual computing environment comprising a method for restricting the number of consequential interactions of a virtual object with further virtual objects when the number of interacting objects involved in said consequential interactions reaches a predefined maximum. Matsuda teaches "In an observation study, for example, a number of clients each want to see and

walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of Matsuda and put a limit on the number of interactions between objects with the motivation to maintain the speed and usability of the virtual world.

Sato and Matsuda do not teach that restricting the number of consequential interactions would avoid undesirable loops. However Sato and Matsuda do teach that restricting the number of consequential interactions (see previous paragraph). The phrase "thereby avoiding undesirable loops" is nonfunctional descriptive material and is not functionally involved in the steps recited. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, see In re Gulack, 703 F.2d 1381, 217 USPQ 401, 403 (Fed. Cir. 1983); In re Lowry, 32, F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994).

In regards to claim 9, Sato and Matsuda teach all the limitations of claim 8. Sato further teaches a server as claimed in claim 8 wherein said relationship is direct (Figure 2, Elements 38 and 40, "Actor-to-actor communications").

In regards to claim 10, Sato and Matsuda teach all the limitations of claim 8. Sato further teaches a server as claimed in claim 8, wherein said relationship with at least said second object is an indirect relationship, being a relationship involving at least one mediating interaction with at least one intermediate object (i.e. "The role of the environment actor 32 is to control details such as the color of the background, other than a stage 44, and the brightness of light sources." Column 9, Line 54).

In regards to claim 11, Sato and Matsuda teach all the limitations of claim 10. Sato further teaches a relationship with at least said second virtual object being defined by an order number, said order number being equal to the number of consequentially interacting objects (i.e. Figure 9A).

In regards to claim 12, Sato teaches all the limitations of claim 11. Sato does not teach a server having a predetermined interaction limit, and an interaction stopper operable to prevent further consequential interactions occurring once a number of interactions corresponding to said interaction limit has been reached. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a

regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of Matsuda and put a limit on the number of interactions between objects with the motivation to maintain the speed and usability of the virtual world.

In regards to claim 13, Sato and Matsuda teach all the limitations of claim 13. Sato does not teach a server wherein said predetermined interaction limit is specific to at least one of an interaction order and an interaction type, and said interaction stopper is operable to stop interactions within said specificity. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Sato with the teachings of Matsuda and put a limit on the number of interactions between objects based on the order with the motivation to maintain the speed and usability of the virtual world.

In regards to claim 14, Sato and Matsuda teach all the limitations of claim 8. Sato further teaches a server as claimed in claim 8 wherein said

consequential interaction with said at least second object comprises a change in at least one of location, movement, shape, size, status, internal parameters, color and texture of said second object (i.e. "With this embodiment, other actors can be used to automatically perform various operations with respect to the thus-configured actors (such as launching an actor into the virtual world or killing it off), so that a virtual world can be constructed on the basis of the laws of cause and effect, making it possible to seem like the real world." Column 7, line 11).

In regards to claim 34, Sato teaches a dedicated control element for controlling the functionality of virtual objects belonging to a set of virtual objects within a virtual reality environment (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44), said dedicated control element being associated with said virtual reality environment, and comprising: identification functionality for determining whether a virtual object within said virtual reality environment is a member of said set (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an

egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44), and control functionality for processing events received from said identified virtual object, said control functionality being operable to bring about a consequential interaction of said virtual object with further virtual objects (i.e. "The character actor 28 is responsible for the head of the character 42 on the screen and the character actor 30 is responsible for the head of another character, which is not shown in the figure. A head script used by the character actors 28 and 30 defines actions to be performed by the characters when they bump into a wall or discover an egg, for example. The role of the walk actors 38 and 40 is to define the walking motion (animation) of each character." Column 9, Line 44). Sato does not teach a dedicated control element comprising a method for restricting the number of consequential interactions of a virtual object with further virtual objects when a maximum number of interacting objects involved in said consequential interactions. Matsuda teaches "In an observation study, for example, a number of clients each want to see and walk about the 3-dimensional virtual space by operating its avatar. For each operation, the amount of system processing increases, causing the amount of communication on a transmission line to rise as well since every avatar shares information with other avatars. For this reason, it is necessary to impose an upper limit on the number of clients allowed to participate in the 3-dimensional virtual space each as a guest who wants to have experience of the 3-dimensional virtual space before becoming a regular client." Column 2, Line 31). It would have been obvious to one of

ordinary skill in the art at the time of the invention to modify Sato with the teachings of Matsuda and put a limit on the number of interactions between objects with the motivation to maintain the speed and usability of the virtual world.

Sato and Matsuda do not teach that restricting the number of consequential interactions would avoid undesirable loops. However Sato and Matsuda do teach that restricting the number of consequential interactions (see previous paragraph). The phrase "thereby avoiding undesirable loops" is nonfunctional descriptive material and is not functionally involved in the steps recited. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, see In re Gulack, 703 F.2d 1381, 217 USPQ 401, 403 (Fed. Cir. 1983); In re Lowry, 32, F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994).

Allowable Subject Matter

Claims 1-5, 7, 15-33, 35, and 44-46 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

In regards to independent claims 1, 15, 35, 44, and 45, the prior art found does not teach, splitting an integrally related user-sensible and functional encapsulations of a virtual object at a remote client and server respectively, wherein the server comprises a scene and plurality of virtual objects used in

creating that scene; the functional aspect being a behavioral aspect and the user-sensible aspect being either a display aspect or an interaction aspect; in combination with all of the other claim limitations.

Response to Arguments

Applicant's arguments filed 2/27/2007 have been fully considered but they are not persuasive.

In regards to the Applicant's arguments that Sato and Matsuda do not teach restricting the number of consequential interactions of the virtual object in order to prevent the forming of undesirable loops, the Examiner points out that "forming of undesirable loops" is not functionally involved in the steps recited and thus will not distinguish the claimed invention from the prior art in terms of patentability, see In re Gulack, 703 F.2d 1381, 217 USPQ 401, 403 (Fed. Cir. 1983); In re Lowry, 32, F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994).

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Pesin whose telephone number is (571) 272-4070. The examiner can normally be reached on Monday-Friday except every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kristine Kincaid can be reached on (571) 272-4063. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BP

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